

## **REMARKS/ARGUMENTS**

### *Amendment to Specification*

At the suggestion of the Examiner, the title of the invention was amended in the prior Response to more properly reflect the subject matter set forth in the claims. Upon further reflection, the further amendment to the title included with this Response more clearly sets forth the nature of the invention.

### *Withdrawn Claims 4-9*

As required by the Examiner, claims 4-9, which in the prior Response were noted as being withdrawn in accordance with the restriction requirement, have been canceled pursuant to MPEP 821.01. Applicants reserve the right to present these claims in a subsequent divisional application.

### *Claim Rejections - 35 USC § 101*

The Examiner has not found Applicants' arguments submitted in response to the first Office Action persuasive and has maintained the 35 U.S.C. §101 rejection with respect to claims 1 - 3 and has also applied the 35 U.S.C. §101 rejection to new claims 10 - 12. Applicants acknowledge and appreciate the effort the Examiner has put into providing a detailed reasoning for the rejections. However, Applicants believe that the Examiner has misunderstood parts of Applicants' arguments presented in the prior response. Additionally, having reviewed the case law and the Examiner's remarks carefully, Applicants continue to believe that the claims do define patentable subject matter. In order to address what Applicants believe is the Examiner's misunderstanding of their arguments and in order to present the claims with amendment for

further consideration, Applicants have filed a Request for Continued Examination so that these issues can be fully addressed.

The Examiner states:

Applicant asserts that the data claimed is similar to that of the claims discussed in *AT&T Corp v. Excel Communications* (1999). This is not persuasive, as Applicant's claims are not limited to a particular type of data value having a specific useful non-abstract result. The claims are drawn to a virtual library of parts or components that can be used to make chemical structures. This is not even a library of actual chemicals, but merely a collection of characterization data, structural variation, combinatorial reactions and molecular descriptors of components that can make up a structure. This is not comparable to a PIC indicator, which has a specific meaning, and a specific value, and immediate use.

Contrary to the Examiner's assertion, Applicant did not assert that the data claimed is similar to that discussed in *AT&T Corp v. Excel Communications*. Clearly different types of claimed information in *AT&T* and in the present application will be different. Applicants' point in mentioning *AT&T Corp v. Excel Communications* was that *AT&T Corp v. Excel Communications* followed the reasoning of *In re Warmerdam* with respect to the standard for evaluating whether claims meet the 101 requirements. Applicants respectfully submit that the present claims meet the Warmerdam standard. Applicants incorporate the following parts of their earlier Response as follows:

In particular, Applicant's submit that the Examiner's characterization of the claims as: non-functional descriptive material, data representations, mere presentations of information, and data structures is incorrect for the reasons set out below. The court in *In re Warmerdam* found that the dispositive issue in that case was "...whether the claim is for a process that goes beyond simply manipulating "abstract ideas" or "natural phenomena." **Applicants do not claim either a natural phenomena or a manipulation of abstract ideas.** With reference to the present case, an abstract idea may well be that be that there might be some way of characterizing molecular components in such a way that the characteristics of combinations of the molecular components could be assessed. An

even more specific, but still abstract, idea might be to utilize some form of metric to characterize the molecular components. These ideas standing by themselves are the type of abstract ideas which may be deemed non-statutory under *Warmerdam*.

These are not the type of ideas standing by themselves which Applicants present in their claims.

On the contrary, Applicants have taught and claimed a particular, useful, and fully enabled embodiment of the broader idea. As stated in the prior Response:

Applicants submit that the claims presented more than fully meet the standard set forth both in *Warmerdam* and in *ATT & T*. The virtual library of the present application represents information about molecular structural components, a useful, non-abstract result that facilitates a hitherto impossible type of searching. The present application, provides a tangible, concrete and useful method of achieving the goals of the abstract ideas mentioned above.

There also seems to Applicants that there is some confusion as to what makes up the virtual library. As noted above, the Examiner states:

This is not even a library of actual chemicals, but merely a collection of characterization data, structural variation, combinatorial reactions and molecular descriptors of components that can make up a structure.

The Examiner's characterization is not entirely accurate. In fact, what makes the virtual library so useful is the fact that the molecular components are described in the virtual library by means of a molecular descriptor validated as possessing a neighborhood behavior. The actual descriptive files (examples of which are given in the specification) that can be searched in the virtual library are the result of applying validated molecular descriptors to the molecular structures. For instance, molecular fragments (structural variations or cores) in the virtual library are described in part in terms of the topomeric CoMFA descriptor of steric fields around the topomerically

aligned molecular fragment (structural variation or core). This is a far cry from a mere descriptive listing of molecular parts as suggested by the Examiner.

As further noted in the prior Response:

However, a knowledge of the valid descriptors is not sufficient in and of itself, to build a searchable library. Applicants have further taught how to construct the virtual library in such a way that the properties of product molecules (those which can be assembled from the component parts) can be searched without the necessity of actually generating the product structures. The structure of the virtual library is what makes such searching possible. The virtual library is inventive, it is not abstract, and it is not just a data structure or representation as suggested by the Examiner.

Applicants respectfully submit that it is just such practical applications that are envisaged as rendering a method statutory subject matter under the statute and relevant jurisprudence.

The Examiner also notes that:

Where certain types of descriptive material, such as music, literature, art, photographs and mere arrangements or compilations of facts or data, are merely stored so as to be read or outputted by a computer without creating any functional interrelationship, either as part of the stored data or as part of the computing processes performed by the computer, then such descriptive material alone does not impart functionality either to the data as so structured, or to the computer. Such "descriptive material" is not a process, machine or composition of matter.

Applicants believe that both in their prior Response and in the previous additional remarks, they have demonstrated that the structure of the virtual library provides for types of molecular characterizations and searches which heretofore could not be achieved and that this is only possible because the makeup of the virtual library constitutes just such **functional interrelationships** "as part of the stored data or as part of the computing processes performed" as are required to make the invention statutory.

In order to emphasize the fact that it is the functional structure of the virtual library and

the manner in which its components are defined that enables the searching, Applicants have amended claims 1, 2, 3, 10, 11, and 12 by removing from the preamble the reference to searching the virtual library for product molecules and placing the recitation at the end of the claim in a "wherein" clause. Amended in this manner, Applicants submit that the functional link between the ability to search and the structure of the virtual library and its components will be more apparent.

In view of the claim amendments and the arguments presented, Applicants respectfully request that the 101 rejections be removed.

*Claim Rejections - 35 USC § 102(e)*

The Examiner has further rejected claims 1 - 3 and new claims 10 - 13 under 35 USC § 102(e) as being anticipated by Agrafiotis. The Examiner states:

Applicant argues that Agrafiotis does not disclose the same types of data resulting from the same types of computations as those being claimed. Applicant argues that the methods of Agrafiotis are completely different, and therefore, the resulting libraries cannot be the same. This is not persuasive, as these are product-by-process claims to non-functional descriptive material. Applicant has the burden to demonstrate that the process steps recited in the claim produce material differences in the product being claimed.....

It is the examiner's position that the resulting product, the virtual library itself, which comprises chemical structures, or parts thereof, is the same. The product is a collection of data indistinguishable from any other collection of data when looked at as a composition of matter or computer disk. ... The virtual library of Agrafiotis, as admitted by Applicant (p.31), comprises chemical structures, or parts thereof, identified as "directed diversity chemical libraries."

The claims are drawn to data representations (virtual libraries) of selected molecules, those molecules being selected by a particular set of characterized data. These are product-by-process claims drawn to nonfunctional descriptive material. Agrafiotis (USP 5,463,564-of record in 08/592,132) discloses virtual libraries of molecules that could be created wherein the libraries comprise information about the possible structures such as

molecular descriptors, characterization data, and common core features. As such, this disclosure provides the same non-functional descriptive material as that being claimed.

Applicants have quoted the Examiner at some length since Applicants not only respectfully disagree with the Examiner's conclusions, but also believe that some of the Examiner's observations are not supported in the materials. Essentially, the essence of the Examiner's argument is that since Applicants are claiming non-functional descriptive matter, such non-functional descriptive matter is no different from any other non-functional descriptive matter such as found in Agrafiotis.

First, with respect to what is contained in the Agrafiotis disclosure, Agrafiotis describes the use of many data bases in his method. However, Agrafiotis' data bases contain information about real chemical compounds. To the best of Applicants' knowledge, Applicants did not make the statement attributed to them by the Examiner, namely that: "The virtual library of Agrafiotis, as admitted by Applicant (p.31), comprises chemical structures, or parts thereof, identified as "directed diversity chemical libraries."" For the record, Applicants do not believe that Agrafiotis teaches anything about a virtual library especially as that term is used by Applicants.

Second, Applicants have argued extensively above that Applicants' claims to the virtual library are not claims to non-functional descriptive matter. Accordingly, even if Agrafiotis taught a library of non-functional descriptive matter, it can not anticipate or be equivalent as a product-by-process claim to Applicants' functional virtual library.

Assuming for the sake of argument that both Agrafiotis and Applicants teach functional (as opposed to non-functional) virtual libraries, Agrafiotis can not anticipate Applicants'

invention because the product-by-process of Applicant is a virtual library which relies on the characterization by molecular descriptors validated as possessing a neighborhood property. Nowhere does Agrafiotis describe the application of a molecular descriptor validated as possessing a neighborhood property to any of the data in his data bases. Applicants incorporate herein Applicants' arguments with respect to Agrafiotis presented in Applicants' prior Response.

Finally, claim 10 has been amended to more properly recite the computer system elements listed in the specification. In view of the arguments presented, Applicants respectfully request that the Examiner remove the 102(e) rejections.

Applicants submit that they have adequately addressed all grounds for rejection raised by the Examiner and respectfully request that a timely Notice of Allowance be issued in this case.

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Respectfully submitted,

A handwritten signature in cursive script that reads "Laurence Weinberger".

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